

REMARKS

I. Status of Claims

Claims 45-88 are currently pending. Without prejudice or disclaimer, claim 61 has been amended to correct a typographical error and claim 67 has been amended to correct an inadvertent omission. Exemplary support for the amendment can be found in the specification as-filed, e.g., page 10, lines 23-25 and page 11, lines 3-7. Accordingly, the specification provides written description support for the amendment, and, thus, no new matter has been added.

II. Claim Objection

The Examiner states that “[c]laim 67 appears to be erroneously dependent on claim 61.” Dec. 5, 2008, Office Action at 2.

Applicants respectfully disagree. Claims 61 and 67, recite the following:¹

61. The thermoplastic material according to claim 45, wherein the elastomeric phase of the heterophase copolymer (b) is at least 10% by weight relative to the total weight of the heterophase copolymer.

67. The thermoplastic material according to claim 61, wherein the elastomeric phase has the following composition: 15 mol% to 85 mol% of ethylene; 85 mol% to 15 mol% of an α -olefin; and 0 mol% to 5 mol% of a diene.

The specification as-filed states:

The elastomeric phase of the heterophase copolymer (b), mainly produced during the abovementioned phase (ii) of the process, is at least 10% by weight, preferably at least 40% by weight, more preferably at least 60% by weight, relative to the total weight of the heterophase copolymer, and consists

¹ While both claims have been amended, neither amendment was necessary to overcome this objection.

of an elastomeric copolymer of ethylene with an α -olefin and optionally with a polyene. Said α -olefin is preferably propylene; said polyene is preferably a diene. . . . The composition of the elastomeric phase is generally as follows: from 15 mol % to 85 mol % of ethylene; from 85 mol % to 15 mol % of an α -olefin, preferably propylene; from 0 mol % to 5 mol % of a polyene, preferably a diene.

Specification as-filed at page 10, line 23 – page 11, line 7. Accordingly, claim 67 provides the percentage of the components of the elastomeric phase recited in claim 61, and, thus, properly depends from claim 61, which provides the percent amount of the elastomeric phase in the heterophase copolymer.

III. Rejection under 35 U.S.C. § 112, ¶ 2

The Examiner rejects claim 88 under 35 U.S.C. § 112, ¶ 2, as allegedly being indefinite. *See* Dec. 5, 2008, Office Action at 2. Specifically, the Examiner questions what encompasses “industrial, sport or safety surfaces,” and “sound barriers . . . automotive locary; pipe or hose materials; roofing materials; and geomembranes” allegedly “fail to explicitly show where or to what extent the composition is a part of/or is that product.” *Id.* The Examiner also questions what is meant by “surfaces.” *Id.*

Applicants respectfully traverse for the following reasons.

The specification notes that “[t]he thermoplastic material according to the present invention may be formed into different kinds of manufactured products,” including those products recited in claim 88. Claim 88 is set forth with reasonable clarity and particularly such that one of ordinary skill in the art would readily understand what is meant by the products in claim 88. *See* M.P.E.P. § 2173.02. Indeed, one of skill in the

art would be able to interpret the metes and bounds of the claim. *See id.* Accordingly, Applicants respectfully submit that the rejection should be withdrawn.

IV. Rejection under 35 U.S.C. § 102

The Examiner rejects claims 45-48, 58-60, 64-66, 70-78, 87, and 88 under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 6,476,117 to Wang et al. ("Wang"). *See* Dec. 5, 2008, Office Action at 3.²

Applicants respectfully traverse the rejection for the following reasons.

In order for Wang to anticipate the claimed invention, each and every element as set forth in the claim must be found, either expressly or inherently, in Wang. *See* M.P.E.P. § 2131. However, not only must Wang "disclose all elements of the claim within the four corners of the document, but [it] must also disclose those elements 'arranged as in the claim.'" *Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1369, 88 U.S.P.Q.2d 1751, 1758 (Fed. Cir. 2008) (citation omitted). The test is thus understood to mean "arranged or combined in the same way as in the claim." *Id.* at 1370, 88 U.S.P.Q.2d at 1759. For example, in order to anticipate the claimed invention, Wang must clearly and unequivocally disclose the claimed thermoplastic material to one of ordinary skill in the art "without any need for picking, choosing and combining various disclosures." *In re Arkley*, 455 F.2d 586, 587, 172 U.S.P.Q. 524, 526 (C.C.P.A. 1972). In other words, one of skill in the art must be able to "at once envisage" the invention as claimed. *See* M.P.E.P. § 2131.02. Thus, as the courts have repeatedly held, the disclosure of each and every element in a single reference is not enough. *Finisar Corp.*

v. DirecTV Group, Inc., 523 F.3d 1323, 1334, 1338, 86 U.S.P.Q.2d 1609, 1618 (Fed. Cir. 2008).

Under the M.P.E.P. and the relevant case law, Wang does not anticipate the claimed invention. Specifically, the claimed invention recites:

A thermoplastic material comprising

(a) 5% by weight to 95% by weight of a vulcanized rubber in a subdivided form;

(b) 5% by weight to 95% by weight of at least one heterophase copolymer comprising a thermoplastic phase made from a propylene homopolymer or copolymer and an elastomeric phase made from a copolymer of ethylene with an α -olefin; and

(c) 0% by weight to 90% by weight of at least one α -olefin homopolymer or copolymer different from (b);

the amounts of (a), (b) and (c) being expressed with respect to the total weight of (a) + (b) + (c).

To attempt to support the anticipation rejection, the Examiner argues that Wang “teaches the production of a thermoplastic blend that may comprise about 1 to 80% by weight of a cryogenically ground rubber and about 20 to about 99% by weight heterophase copolymer, which at column 3 (lines 41-54) may comprise a polypropylene segment and at the paragraph bridging column 5 to column 6, an ethylene, α -olefin (propylene) and polyene.” Dec. 5, 2008, Office Action at 3.

Wang, however, does not anticipate because it fails to teach or suggest every limitation of the claimed invention. Wang discloses a “thermoplastic elastomer including a multi-block polymer that includes randomly distributed hard and soft segments

² Applicants note that in view of Applicants’ U.S. effective filing date of March 31, 2003, Wang is § 102(a) prior art and not § 102(e) prior art.

connected by covalent bonds. The hard segments include polymeric chains of a crystalline polyalkylene, while the soft segments include a near-gelation polymer.” Wang, col. 2, lines 24-29 (emphasis added). Wang further explains that “the present invention provides a thermoplastic elastomer produced by allowing a functionalized, near-gelation polymer to react with a functionalized, crystalline polyalkylene and allowing for a time sufficient to form the elastomer.” *Id.* at col. 2, lines 31-35 (emphasis added). Wang states that “a covalent bond is allowed to form between at least one functional group on each of the near-gelation elastomer and a functionalized crystalline polyalkylene.” *Id.* at col. 2, lines 42-44 (emphasis added). Thus, the thermoplastic elastomers of Wang are formed by a random distribution of segments or blocks linked by covalent bonds through their functional groups.

Thus, one skilled in the art would readily recognize that the thermoplastic elastomers of Wang differ structurally from the claimed heterophase copolymer (b). Specifically, page 6, lines 1-16 of the specification as-filed defines “heterophase copolymer,” as used in the claims, to mean “a thermoplastic elastomer obtained by sequential copolymerization of: (i) propylene, optionally containing small amounts of at least one olefinic comonomer selected from ethylene and α -olefins other than propylene; and then of: (ii) a mixture of ethylene with an α -olefin, in particular propylene, and optionally with small proportions of a polyene, in particular a diene.” In contrast to the thermoplastic elastomers of Wang, the heterophase copolymer (b) of the claimed invention does not comprise functionalization and does not comprise a thermoplastic homo- or copolymer of propylene linked sequentially (not randomly) and directly (not by covalent bonds through functional groups) to an elastomeric copolymer

of ethylene with α -olefins. For this reason, Applicants respectfully submit that Wang does not anticipate the claimed invention, and the rejection should be withdrawn.

Moreover, Wang does not disclose all of the remaining elements arranged as recited in the claims. In fact, one of skill in the art would be required to pick and choose from the multitude of ingredients to even begin to achieve the claimed invention. For example, Wang provides a laundry list of additives that can be added to the disclosed thermoplastic elastomer as follows:

Stabilizers, antioxidants, conventional fillers, reinforcing agents, reinforcing resins, pigments, fragrances and the like are examples of some such additives. Specific examples of useful antioxidants and stabilizers include 2-(2'-hydroxy-5'-methylphenyl) benzotriazole, nickel di-butyl-di-thiocarbamate, zinc di-butyl-di-thiocarbamate, tris(nonylphenyl) phosphite, 2,6-di-t-butyl-4-methylphenol and the like. Exemplary conventional fillers and pigments include any of the sundry fillers, including reinforcing fillers, commonly used in elastomeric compositions of matter. These include, for example and without limitation, carbon black, silica, mineral fillers such as clays, including hard clays, soft clays, and chemically modified clays, mica, talc, (magnesium silicate), calcium carbonate, titanium dioxide, ground coal, cryogenically ground rubber, magnesium-hydroxide, alumina trihydrate, iron oxide and mixtures thereof

Id. at col. 9, line 58 – col. 10, line 9. Wang, however, does not provide any guidance for selecting cryogenically ground rubber to the exclusion of the other possible additives. Indeed, the examples of Wang do not disclose the addition of cryogenically ground rubber to the disclosed thermoplastic elastomer. Furthermore, Wang is silent as to whether the cryogenically ground rubber is vulcanized and in subdivided form, as claimed. The Examiner even concedes that Wang “is silent as to the specific rubber employed as the cryogenically ground rubber.” Dec. 5, 2008, Office Action at 4.

For these additional reasons, one skilled in the art would not “at once envisage” the claimed invention from Wang. Thus, Applicants respectfully submit that Wang does not anticipate the claimed invention and the rejection should be withdrawn.

V. Rejections under 35 U.S.C. § 103

A. The Examiner rejects claims 45-53, 58-60, 64-78, 87, and 88 under 35 U.S.C. § 102(e) as anticipated by, or, in the alternative, under 35 U.S.C. § 103 as allegedly being unpatentable over Wang. *See* Dec. 5, 2008, Office Action at 3-4.³

Applicants respectfully traverse for the following reasons.

As discussed above, Wang fails to anticipate the claimed invention because it fails to teach each and every limitation of the claimed invention, namely, the claimed heterophase copolymer (b), and, furthermore, one skilled in the art would not “at once envisage” the claimed invention from Wang. For this reason, Wang cannot anticipate claims 45-53, 58-60, 64-78, 87, and 88.

Furthermore, with respect to claims 49-53, the Examiner improperly states that these claims “recite particle sizes for the ‘vulcanized rubber in a subdivided form’ that may be as large as .39”.” *Id.* at 3. As the Board has noted, such “[b]road conclusory statements standing alone are not ‘evidence’” upon which an obviousness rejection may be based. *Redox Techs. Inc. v. Pourreau*, 73 U.S.P.Q.2d 1435, 1449 (Bd. Pat. App. & Int. 2004) (quoting *In re Kotzab*, 217 F.3d 1365, 1369-70, 55 U.S.P.Q.2d 1313, 1316-17 (Fed. Cir. 2000)).

³ Again, Applicants note that Wang is § 102(a) prior art and not § 102(e) prior art.

Assuming for the sake of argument, however, that one of skill in the art would have even selected and added cryogenically ground rubber from the laundry list of optional additives, Wang says nothing whatsoever as to whether the rubber has the particle size recited in the claims and the Examiner may not rely upon a person of ordinary skill in the art to optimize to achieve these particle sizes. The M.P.E.P. states that only result effective variables can be optimized, and that a particular parameter must first be recognized as a result-effective variable before the determination of the optimum ranges of the variable might be characterized as routine experimentation. *See* M.P.E.P. § 2144.05 (citing *In re Antonie*, 559 F.2d 618, 195 U.S.P.Q. 6 (C.C.P.A. 1977)). Here, there is no evidence that particle size of the cryogenically ground rubber was deemed to be a result-effective variable. For this additional reason, Wang does not teach or even suggest all of the limitations of the claim.

Regarding the Examiner's reliance on Wang to reject these claims as obvious, Applicants note that the Examiner has provided no rationale whatsoever for the obviousness rejection. Rather, the Examiner has merely provided yet another conclusory statement that Wang renders unpatentable claims 45-53, 58-60, 64-78, 87, and 88. The Examiner had abdicated his role in the process by not identifying, for example, why such claimed inventions are predictable based on the teachings of Wang.

The Examiner's unsupported conclusion of obviousness without any reasoning why one of skill in the art would have been guided to the claimed invention based on Wang violates the Supreme Court's admonishment against conclusory statements. *See KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 U.S.P.Q.2d 1385, 1396 (2007) (*In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)) ("[R]ejections on obviousness grounds

cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”)); *see also* M.P.E.P. § 2141(III) (“The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.”). For this reason, Applicants respectfully submit that the rejection is improper and should be withdrawn.

B. The Examiner rejects claims 45-88 under 35 U.S.C. § 103 as allegedly being unpatentable over Wang in view of U.S. Patent No. 4,818,785 to Ottawa et al. (“Ottawa”). *See* Dec. 5, 2008, Office Action at 4. The Examiner even concedes that Wang “is silent as to the specific rubber employed as the cryogenically ground rubber or the inclusion of a second thermoplastic resin (c).” Dec. 5, 2008, Office Action at 4. However, the Examiner argues that Ottawa allegedly cures these deficiencies. *See id.* Applicants respectfully traverse for the following reasons.

With respect to obviousness, several basic factual inquiries must be made in order to determine the obviousness or non-obviousness of claims under 35 U.S.C. § 103. These factual inquiries, set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459, 467 (1966), require the Examiner to:

- (1) Determine the scope and content of the prior art;
- (2) Ascertain the differences between the prior art and the claims in issue;
- (3) Resolve the level of ordinary skill in the pertinent art; and
- (4) Evaluate evidence of secondary considerations.

The obviousness or nonobviousness of the claimed invention is then evaluated in view of the results of these inquiries. *Graham*, 383 U.S. at 17-18, 148 U.S.P.Q. at 467; *see*

also *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1730, 82 U.S.P.Q.2d 1385, 1388 (2007).

Indeed, to establish a *prima facie* case of obviousness, the Examiner must:

make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention.

M.P.E.P. § 2142. "The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious."

Id. It is important to note, moreover, that the prior art references relied upon in a rejection "must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention." M.P.E.P. § 2141.03(VI); *see also Graham*, 383 U.S. at 17, 148 U.S.P.Q. at 467.

The Examiner has not established a *prima facie* case of obviousness because the claimed invention as a whole would not have been obvious over Wang and Ottawa when considered as a whole. Specifically, the Examiner has filed to provide any evidence why one of skill in the art would have been guided to modify Wang in view of Ottawa in order to result in the claimed invention.

As discussed above and acknowledged by the Examiner, Wang merely provides a laundry list of possible additives that may be added to the disclosed thermoplastic material, but provides no preference or other form of guidance for adding one additive over another, including cryogenically ground rubber. Wang also fails to disclose whether the cryogenically ground rubber is vulcanized and within any of the particle size ranges. Furthermore, as discussed above and acknowledged by the Examiner, Wang

fails to teach the inclusion of at least one α -olefin homopolymer or copolymer different than the disclosed multi-block polymer.

While the Examiner has relied on Ottawa to allegedly establish “the use of a particulate vulcanized rubber constituent that may comprise the monomers recited herein,” the Examiner has provided no evidence why one of skill in the art would have looked to Ottawa in order to make these modifications of Wang. The Examiner merely states that “[t]he employment of conventional thermoplastic elastomer compounding additives, as taught by Ottawa [sic] et al in the composition, in view of their art-recognized uses, would be prima facie obvious modification to an artisan having an ordinary skill in the art.” Yet again, in contravention of the M.P.E.P., the rulings of the Board, the Federal Circuit, and the Supreme Court, the Examiner’s conclusory rationale for modifying Wang with Ottawa falls far short of the required “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”

Moreover, even assuming for the sake of argument that one of skill in the art would have been guided to look to Ottawa to modify Wang, which Applicants do not concede, one of skill in the art would not have been guided to modify the cryogenically ground rubber disclosed in Wang with the fine particular crosslinked amorphous copolymer of Ottawa because it is not cryogenically ground. To the contrary, Ottawa explains that the finely particulate crosslinked amorphous copolymer can be separated and dried from an aqueous medium by applying “a conventional drying method such as spray drying, flash drying and freeze drying.” Ottawa, col. 9, lines 19-23. Thus, one of skill in the art would not have been motivated to modify the cryogenically ground rubber disclosed in Wang with the fine particular crosslinked amorphous copolymer of Ottawa.

For these reasons, Applicants respectfully submit that the rejection should be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

If the Examiner believes a telephone conference could be useful in resolving any of the outstanding issues, he is respectfully urged to contact Applicants' undersigned counsel at 202-408-4152.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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